LOWER CRETACEOUS FOSSILS FROM THE SOURCES OF THE BARCOO, WARD AND NIVE RIVERS, SOUTH CENTRAL QUEENSLAND.

PART II.—CEPHALOPODA.[1]

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(Plates lxv.-lxviii.)

Of the few "Ammonites" contained in Mr. H. W. Blomfield's Collection only one requires detailed notice; this will conclude the account of the fossils presented by him to the Trustees. The whole series is a most instructive one, and has added largely to our knowledge of Australian Cretaceous Palæontology.

The species are:—

Schlœnbachia rostratus, J. Sby., sp.
Haploceras daintreei, Eth., sp.
Amaltheus olene, Ten. Woods, sp.

I take the opportunity, also, of describing another Ammonite new to our Cretaceous rocks, and also a Gasteropod; these were sent to me from the Queensland Museum amongst the *Crioceri* lately described.

Genus SCHLŒNBACHIA, *Neumayr*, 1875.

(Sitz. K. Akad. Wissensch. Wien., lxxi., 1 Abth., No. 5, 1875 p. 658.)

Obs.—A genus created for a series of variable species of Chalk Ammonites with strong and pronounced keels, such as *A. rostratus*, J. Sby., *A. texanus*, F. Roemer, *A. varians*, J. Sby., etc.

SCHLŒNBACHIA ROSTRATUS, *J. Sby.*, sp.

(Plates lxv., lxvi., lxvii.)

Ammonites rostratus, J. Sby., Min. Conchol., ii., 1817, p. 163, pl. clxxiii.

Ammonites inflatus, J. Sby., *ibid*, p. 170, pl. clxxviii.

Ammonites inflatus, D'Orb., Pal. Franç. Terr. Crét., i. (Ceph.), 1841, p. 304, pl. xc.

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[1] Continued from p. 188.

Ammonites inflatus, Stoliczka, Foss. Ceph. Cret. Rocks S. India (Pal. Ind.), i., ser. 3, pt. 1, 1863, p. 48, pl. xxvii., pl. xxviii., pl. xxix., pl. xxx., figs. 1-3.

Ammonites (Schlænbachia) inflatus, Eth. fil., Geol. Pal. Q'land, &c., 1892, p. 493, pl. xxxiv., figs. 1-4, (?) pl. xlii., fig. 12.

Sp. Chars.—Shell large, discoid; whorls numerous (precise number unknown); venter variable, narrow or broad according to age, broad in young examples, narrower in more mature and aged individuals; keel more prominent and sharper in older than in younger shells, the surface of the venter always channelled on each side the keel; abdominal angles defined by lines of large tubercles varying in character according to position, and always hidden by the embracement of the whorls; dorsum corresponding in width to the venter, with a U-shaped impressed zone, in the young sharply angular but in older individuals wider and shallower; flanks flat to depressed convex; umbilical cavity wide and open exposing all the whorls; section variable, according to age, but always higher than wide, and in strict outline octagonal; costæ on the older and smaller whorls gracefully sigmoidal and usually bifid at about the middle of the flanks, but in aged examples this bifurcation ceases and the costæ are all single, long and short alternately; tubercles in two or three lines, or rows, on each side of the keel, one row abdominal in position, the other supra-umbilical, and if a third be present it is mid-lateral; all increase in size with age, the abdominal in the gerontic condition are large, conical and pointed; spiral lyræ also occur on middle-aged shells, roughening the costæ, but faint in the valleys, and crenulating the abdominal rows of tubercles, also visible in the ventral channels.

Obs.—Although known as an Australian species I am induced to figure the accompanying specimens as indicative of size and confirmatory of the previous determination. The mouth has not been observed in an Australian specimen and the rostrum only doubtfully so. The variation in size and form of the tubercles is remarkable; where crossed by the spiral lyræ they are more expanded and blunter as compared with the conical projections of other parts of the shell.

The section, inclusive of the dorsal groove, is octagonal in the smaller and younger whorls, but longitudinally elongated in consequence of the projection of the keel; the embracement of the whorls always conceals the abdominal row of tubercles.

Dr. F. Stoliczka commented on the variability in the number of rows of tubercles in Indian specimens of this species. The same instability appears to exist in the present specimens, one of the matrix casts exhibiting three rows, two others two rows only; the coiled cast (Pl. lxvii., fig. 1) one row on the concealed whorls, and two on the exposed volutions; the testiferous example reveals only two, but between these rows, the intersection of the costæ and lyræ become prominent and sub-echinate.

The sigmoidal curvature of the costæ is far more noticeable on the young than the more mature individuals, and the sharpest curve of each sigmoid is always in the ventral channels where it practically forms a continuation or extension of the tubercles, and is directed forwards.

The largest matrix cast represents a perfect shell of one foot in diameter.

The resemblance between the Australian examples of *S. rostratus* and Stoliczka's figures of specimens from the Ootatoor Group of the Indian Cretaceous, particularly that represented in his Plate xxvii. is very strong.

S. ROSTRATUS, *J. Sby.*, var. ANTIPODEUS, *Eth. fil.*

Hystrichoceras, sp., Eth. fil., Mem. R. Soc S. Austr., ii., 1, 1902 p. 47.

Hystrichoceras antipodeus, Eth. fil., *ibid*, pl. vii., fig 6.

Obs.—In my account of the South Australian Cretaceous fossils I placed a few small fragmentary Ammonites provisionally in *Hystrichoceras*, Hyatt[2]. These shells, I have since learnt, occur at Point Charles in incredible numbers, and never appear to attain to more than a small size, as I now find through the reception of successive collections. At the time I wrote the fragmentary specimens before me did not reveal what I now believe to be their close relation to the inner, or younger whorls of *S. rostratus*. Hyatt selected *Ammonites coupei*, Brong., as the type of his proposed genus, but figured *A. varians*.[3]

Our Point Charles Cephalopods present a most unmistakable resemblance to the latter, but less to the former. Now, Mr. A.

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[2]Hyatt—Zittell's Handb. Pal. (Eastman ed.), i. 1900, p. 589.

[3]Hyatt—*Loc. cit.*, p. 589, fig. 1233.

de Grossouvre. in his account of the French Upper Chalk Ammonites[4] amended Neumayr's *Schlœnbachia*, saying—"Je prendrai donc comme espèce type de ce genre *Schlönbachia varians.*" It follows, therefore, if *A. varians*, J. Sby., is to be considered a typical example of *Hystrichoceras*, the latter and *Schlœnbachia*, Grossouvre, are in a measure synonymous, but, if on the other hand, Hyatt's name is restricted to *A. coupei*, it may not be so. Be this as it may, until we are better acquainted with the limits of *Hystrichoceras* as intended by Hyatt, I consider it sounder policy to place the Point Charles shells under *Schlœnbachia rostratus*, retaining my specific name *antipodens* as a varietal one.

The finer structural details, owing to the peculiar state of preservation, are not visible on the Point Charles specimens, but the abdominal tubercles, as in the larger *S. rostratus*, are canted forwards towards the mouth.

The fine specimen now to be described, from the collection of the Queensland Museum, combines in one two fossils not hitherto recorded from the Australian Cretaceous. These are an Ammonite, appertaining to the genus *Perisphinctes*, Waagen, and a Pleurotomarid, in all probability a species of *Leptomaria*, Deslonchamps. In their present condition these fossils are simply casts, all trace of the tests having disappeared. Both genera are met with in the Jurassic and Cretaceous formations, but these types are essentially Cretaceous. For the opportunity of describing them I am indebted to Mr. C. J. Wild, Acting-Director of the Queensland Museum.

Genus Perisphinctes *(Waagen), Neumayr and Uhlig*, 1881.

(Palaeontographica, xxvii., 1881, p. 143.)

Perisphinctes kayseri, *N. and U.*

(Plate lxviii.)

P. kayseri, N. and U., Palaeontographica, xxvii., 3-6, p. 146, pl. xix., figs. 1, 1*a* and *b*.

Sp. Chars.—Shell large, obtusely planorbiform; number of whorls unknown, but the volutions increasing in width slowly; venter convex; flanks rounded, although not greatly so; umbilical or dorsal edge abrupt and declivitous; section longitudinally

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[4]Grossouvre—Mém. Carte Géol. Dét. France, 1893, p. 109.

oval. Sculpture consisting of strong costæ, bent very slightly concave forwards on the flanks, and single as far as the line of embracement of the volutions, there dividing into two or three subordinate costæ forming fasciculi, with here and there single, interpolated, and free costæ, all crossing the venter almost at right angles to the plane of the whorls; tubercles wanting.

Obs.—A large Ammonite measuring fourteen by twelve inches on cross diameters, and three feet six and a half around the circumference (central line of the venter).

The strong costæ, single on the flanks, usually divide into three subordinate ribs, or there may be two only, at the ventro-lateral or abdominal lines, and then cross the venter. When a costa simply bifurcates, there is always a free interpolated secondary rib. The fasciculation of the costæ, a marked feature of the genus, is here a very pronounced character. In common with other species of *Perisphinctes*, tubercles are entirely wanting.

The smaller Ammonite nestling in the umbilical cavity with the *Leptomariæ* may be a young stage of the more mature shell.

A glance at the beautiful figures by Messrs. Neumayr and Uhlig of the North German Hills Formation *Perisphinctes*[5] will at once convince the reader how very closely this Queensland fossil approaches to the European. In fact, I quite fail to appreciate any difference between the former and *P. kayseri*, N. and U., other than that of size, and by a less curvature of the costæ on the local shell, which is slightly more than double the size of the European fossil. It appears to be more akin to this species than to the larger *P. lossani*, N. and U.[6], although even this has some points of resemblance to the Australian representative of the genus.

Genus Leptomaria, *Deslonchamps*, 1865.

(Bull Soc. Linn. Normandie, ix., 1865, p. 423).

Leptomaria (?), sp.

(Plate lxviii.)

Obs.—The close resemblance of these casts to *Leptomaria gigantea*, J. de C. Sby.[7], of the Lower Greensand of England

[5] Neumayr & Uhlig—Palaeontographica, xxvii., 3-6, 1891, pls. xvii.-xxi.

[6] Neumayr & Uhlig—*Loc. cit.*, pl. xviii.

[7] Sowerby—Trans. Geol. Soc., (2), iv., p. 339, pl. xiv., fig. 16; Stoliczka—*Leptomaria*, Cret. Fauna S. India (Pal. Ind.), ii. (Gastropoda), 7-10, 1868, p. 386.

emboldens me to refer them to the genus in question, for little more than resemblance can be made of them. *L. gigantea* is a large conical species with the height and breadth equal, the whorls overlapping, and the sides in general straight. In the present instance, merely internal casts, the whorls were very slightly convex and did not overlap ; no signs of the band or sculpture remain. This slight convexity may not quite afford an index to the true outline, for Stoliczka says of *L. indica*—"only when the surface of the shell is worn off do they present a continuous convex outline."

I have not seen the base, the reference to *Leptomaria* being made solely on the lateral resemblance to *L. gigantea*, *L. indica*, etc.